PROJECT SUMMARY SHEET

PROJECT TITLE NAME: Lake Norden/Lake Albert Assessment
NAME AND ADDRESS OF LEAD PROJECT SPONSOR:

Hamlin County Conservation District CD-37
300 Highway 21
P. O. Box 165
Hayti, SD 57241-0165

STATE CONTACT PERSON: Gene Stueven TITLE: Environmental Senior Scientist
PHONE: (605)773-4254 FAX: (605)773-4068
STATE: South Dakota WATERSHED: Big Sioux River
HUC #10170201

PROJECT TYPES : [] BASE [x] WATERSHED [] GROUNDWATER [] I&E

WATERBODY TYPES	NPS CATEGORY
[ ] Groundwater	[x] Agriculture
[x] Lakes/Reservoirs	[ ] Urban Runoff
[ ] Rivers	[ ] Silviculture
[x] Streams	[ ] Construction
[ ] Wetlands	[ ] Resource Extraction
[ ] Other	[ ] Stowage and Land Disposal
	[ ] Hydrologic Modification
	[ ] Other

PROJECT LATITUDE 44.881898 LONGITUDE -96.637657

SUMMARIZATION OF MAJOR GOALS:,

The goal of the Lake Norden/Lake Albert assessment Project is to locate and document sources of nonpoint source pollution in the watershed. This project will produce a TMDL for trophic state and trend to improve the water quality by reducing nutrient and sediment loading of the streams and lakes. The project will produce feasible restoration recommendations as adequate background information needed to drive a watershed implementation project to improve sedimentation and nutrient problems with the creeks and lakes in the watersheds and to produce TMDL reports for Lake Norden and Lake Albert.

PROJECT DESCRIPTION:

Lake Norden is a natural glacial lake in south central Hamlin County, South Dakota. Lake Albert is a natural glacial lake in south central Hamlin County and northeast Kingsbury County, South Dakota. The lakes receive runoff from agricultural operations and the creeks in the watersheds and the lakes have experienced declining water quality. Lake Norden has a surface area of 746.5 acres and Lake Albert is 3,610 acres. The watershed is approximately 152,530 acres in size below Lake Marsh. The watershed is predominately agricultural land uses with cropland and grazing.

This project is intended to be the initial phase of a watershed wide restoration project. Through water quality monitoring, stream gauging, stream channel analysis and land use analysis, the sources of impairment to the stream and the watershed will be documented and feasible recommendations for restoration will be presented in the final project report.

FY02 319 funds requested $60,200	Local Match $20,100
Other Federal Funds $ 0	State Natural Resources Fee Funds $20,210
319 Full Time Employee Equivalents 1	Total project cost $100,510

2.0 STATEMENT OF NEED

2.1 The purpose of this Pre-Implementation Assessment is to determine the sources of impairments to Lake Norden and Lake Albert in Hamlin and Kingsbury Counties, South Dakota, and the small tributaries in the watershed. The watershed ultimately drains to the Big Sioux River. The creeks and small tributaries are intermittent streams with loadings of sediment and nutrients related to snowmelt or rainfall events.

2.2 Lake Norden and Lake Albert are natural glacial lakes and are listed on the State 303(d) list. The streams in the watershed drain predominantly agricultural lands with both cropland and grazing acres. Feedlots and winter feeding areas for livestock are present in the watershed. The streams carry sediment loads and nutrient loads, which degrade water quality in the two lakes, and cause increased eutrophication of the lakes.

The surface watershed area for Lake Norden and Lake Albert is approximately 152,530 acres in size. Hayti, Badger, Bryant, Arlington and the town of Lake Norden are the only municipalities in the watershed.

2.3 See map in Figure 1.

2.4 Land use in the watersheds is primarily agricultural cropland and grazing. Row crops and hay are the main crops on cultivated lands. Some animal feeding areas are located in the watershed.

Major soil associations found in the watersheds include Poinsett-Waubay-Buse, Brandt-Estelline, Poinsett-Waubay, Poinsett-Buse, Renshaw-Fordville, Fordville-Estelline, Vienna-Lismore, and Lamoure.

The average annual precipitation in the watershed is 20.8 inches of which 80% usually falls in April through September. Tornadoes and severe thunderstorms strike occasionally. These storms are local and of short duration and occasionally produce heavy rain fall events. The average seasonal snowfall is 27.3 inches per year.

2.5 The purpose of this assessment is to develop a TMDL and restoration recommendations for Lake Norden and Lake Albert and the streams in the watershed and serve as the foundation of a Section 319 implementation project.

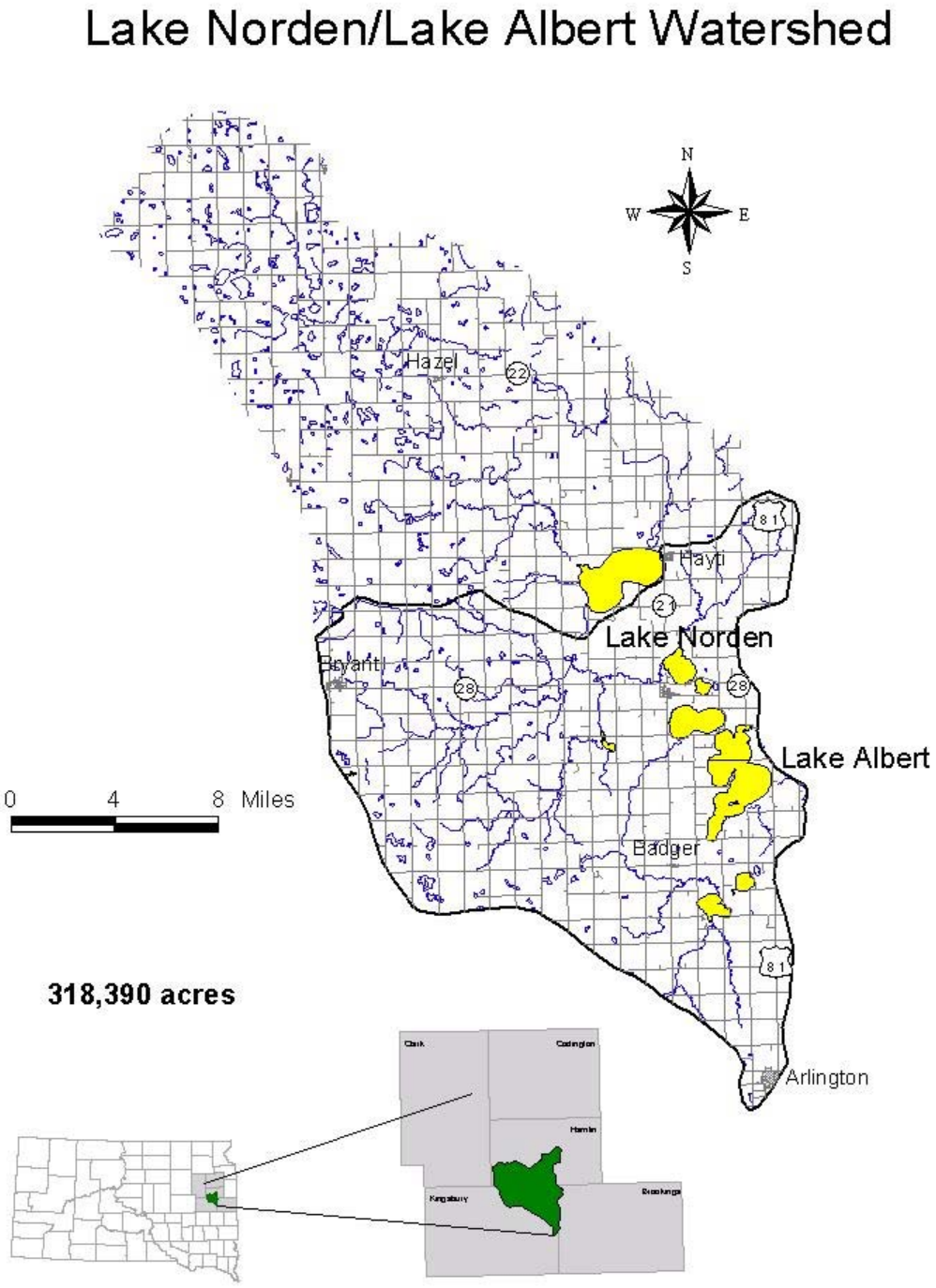

Lake Norden/Lake Albert Watershed
N
W
E
S
Hazel
22
Hayti
81
21
Lake Norden
Bryant
28
28
Lake Albert
0
4
8 Miles
Badger
81
318,390 acres
Arlington
Clark
Codington
Hamlin
Kingsbury
Brookings

Figure 1.

3.1 The Lake Norden/Lake Albert Assessment is a comprehensive assessment that will address rural and urban lands' nutrient and sediment problems in the lakes and the watershed. The overall goal is to produce a TMDL for trophic state and trend to improve the water quality by reducing nutrient and sediment loading of the streams and lakes. This project will produce the information needed for planning an effective implementation project. Reducing nonpoint pollutants in the watershed will improve the water quality for lakes; improve habitat for upland and aquatic species and will improve the recreational uses of Lake Norden and Lake Albert.

3.2 OBJECTIVES AND TASKS

OBJECTIVE 1: The objective of this task is to determine current conditions in the lakes and calculate the trophic state of the lakes. This information will be used to determine the total amount of nutrient trapping that is occurring in the lakes and the amount of reduction of nutrients required to improve the trophic condition of Lake Norden and Lake Albert.

Task 1. Nutrient and solids parameters will be sampled at two in-lake sites on each lake. The South Dakota State Health Laboratory in Pierre will analyze all samples. Samples will be collected from the surface of the lakes on a monthly schedule for a period of 1 year except during periods of unsafe ice cover. A total of forty of samples to be collected will be 40 for the lakes.

Task 2. The purpose of the in-lake samples is to assess ambient nutrient concentrations in the lakes and identify trophic state. Water column dissolved oxygen and temperature profiles will be collected on a monthly basis. Water samples will be collected and the sample bottles will be iced and shipped to the lab by the most rapid means available. The SD State Health Lab in Pierre will analyze fecal coliform samples. Staff from Watershed Protection in the Matthew Training Center Laboratory. Biological samples will be contracted to a private consultant.

Task 3. All samples will be collected using the methods described in the Standard Operating Procedures for Field Samplers by the State of South Dakota Water Resources Assistance Program. Figure 2 is a map of the lake sampling sites.

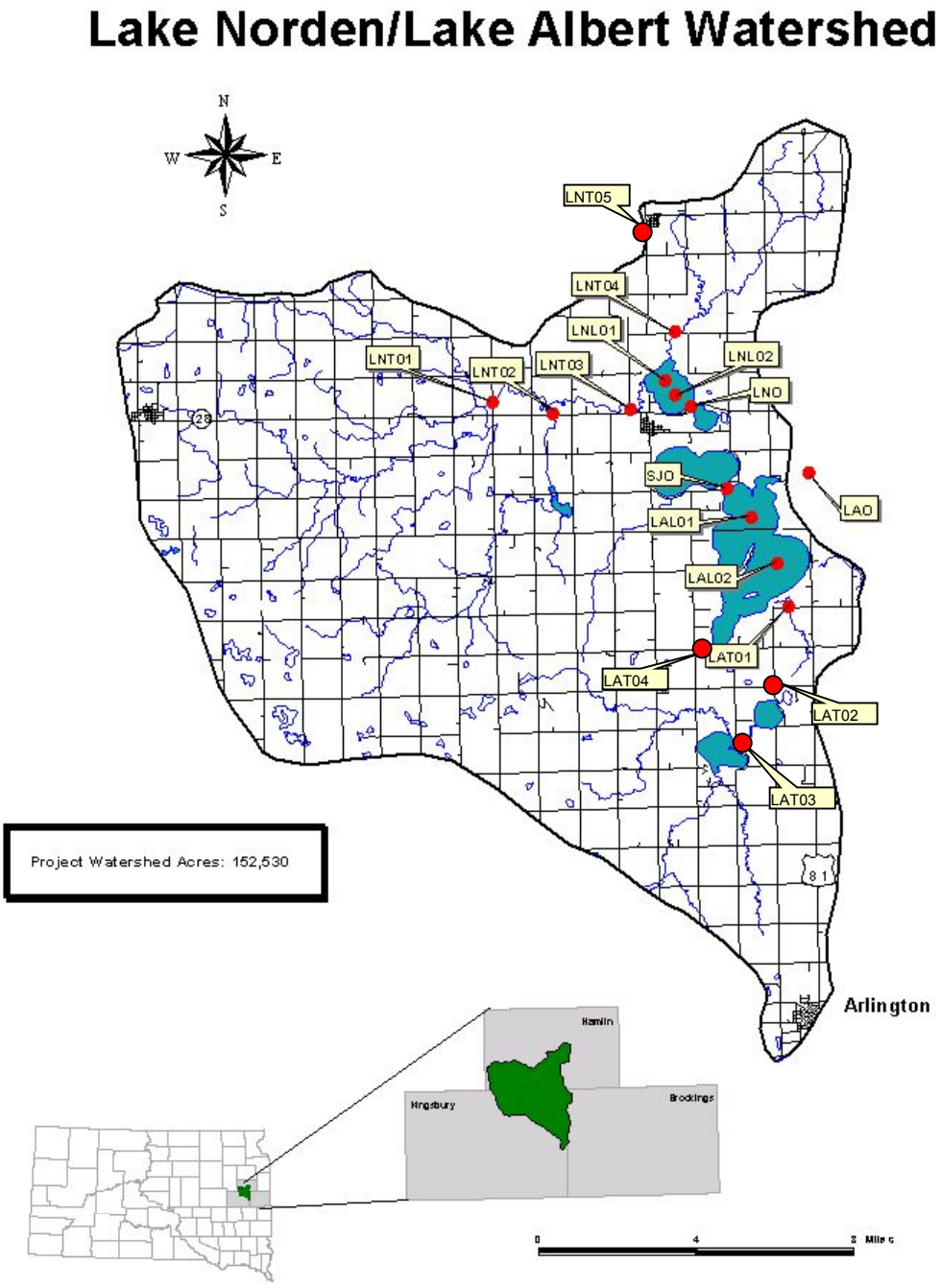

Lake Norden/Lake Albert Watershed
N
W
E
S
LNT05
LNT04
LNL01
LNT01
LNT02
LNT03
LNL02
LNO
SJO
LAO
LAL01
LAL02
LAT01
LAT04
LAT02
LAT03
Project Watershed Acres: 152,530
Arlington
Hamlin
Kingsbury
Brookings

Figure 2.

Lake Sampling Locations – Lake Norden

SITE	LOCATION
LNL01	Lat. 44.5978277 Long. -97.2006692

This site is located in the central portion of the north end of the lake.

LNL02	Lat. 44.5925926 Long. -97.1955130

Approximate central portion of the south end of the lake

Lake Sampling Locations –Lake Albert

SITE	LOCATION
LAL01	Lat. 44.5471741 Long. –97.1581112

Approximate central portion of the north end of the lake

LAL02	Lat. 44.5301458 Long. –97.1457615

Approximate central portion of the south end of the lake

TABLE 1. INLAKE PARAMETERS TO BE MEASURED:

Physical	Chemical	Biological
Air Temperature	Total Alkalinity	Fecal Coliform
Water Temperature	Field pH	E. Coli
Secchi Transparency	Dissolved Oxygen	Chlorophyll a
Depth	Total Solids	Aquatic Macrophytes
Visual Observations	Total Suspended Solids	
	Ammonia	
	Un-ionized Ammonia	
	Nitrate-Nitrite	
	Total Kjeldahl Nitrogen	
	Total Phosphorus	
	Total Dissolved Phosphorus	
	Conductivity	

C. OUTPUTS:

In-lake water quality report (40 samples)
Statistical evaluation of water quality and biological data for the lake
Calculations of trophic state index using Carlson's Trophic State Index.
Dissolved oxygen and temperature profiles.

D. BUDGET:

LINE ITEMS	NON-FEDERAL		STATE	FEDERAL	TOTAL
	CASH	IN-KIND	NRFF	319	PROJECT
Local Coordinator (@ $15/hr)	$1,300				$1,300
Office Rent		$2,400			$2,400
Local Admin.			$4,000		$4,000
Travel				$1,500	$1,500
Water Quality Analysis				$7,000	$7,000
Supplies and Shipping	$400			$300	$700
Boat and Motor		$500			$500
Equipment			$1,000		$1,000
Total	$1,700.00	$2,900.00	$5,000	$8,800	$18,400

RESPONSIBLE AGENCIES:

Task Responsibility:
Project Coordinator
Project Sponsor

Design and Technical Assistance:
South Dakota Department of Environment and Natural Resources

OBJECTIVE 2: Estimate the sediment and nutrient loadings from the individual tributaries in Lake Norden and Lake Albert watershed through hydrologic and chemical monitoring. The information will be used to locate critical areas in the watershed to be targeted for implementation.

TASK 4 Install water level recorders on tributary monitoring sites and maintain a continuous stage record for the project period, with the exception of winter months after freeze up.

Site	Location	
LNO	Lat.	44.5879655
	Long.	-97.1877464
LNT01	Lat.	44.5913853
	Long.	-97.2897751
LNT02	Lat.	44.5868468
	Long.	-97.2586445
LNT03	Lat.	44.5874445
	Long.	-97.2191082

LNT04	Lat.	44.6155394
	Long.	-97.1954051
LNT05	Lat.	44.655992
	Long.	-97.208845
SJO	Lat.	44.5792929
	Long.	-97.1830915
LAO	Lat.	44.5629113
	Long.	-97.1280040
LAT01	Lat.	44.5142022
	Long.	-97.1398575
LAT02	Lat.	44.485223
	Long.	-97.143277
LAT03	Lat.	44.479190
	Long.	-97.146601
LAT04	Lat.	44.499565
	Long.	-97.181229

TASK 5 Discrete discharge measurements will be taken on a regular schedule and during storm surges. Discharge measurements will be taken with a hand held current velocity meter.

TASK 6 Discharge measurements and water level data will be used to calculate a hydrologic budget for the stream systems. This information will be used with concentrations of sediment and nutrients to calculate loadings from the watershed.

TASK 7 Collect water quality samples from 12 tributary monitoring sites. Samples will be collected during spring runoff, storm events, and monthly base flows. Proposed water quality monitoring sites may be found in Figure 3.

TABLE 2. PARAMETERS MEASURED FOR TRIBUTARY SAMPLES:

PHYSICAL	CHEMICAL	BIOLOGICAL
air temperature	total solids	fecal coliform bacteria
water temperature	total susp. solids	E. Coli
discharge	dissolved oxygen	Benthic macroinvertebrate
depth	ammonia	
visual observations	un-ionized ammonia	
water level	nitrate-nitrite	
	TKN	
	total phosphate	
	total dis. phosphate	
	field pH	

TASK 8 Samples will be collected twice weekly during the first week of spring snowmelt runoff and once a week thereafter until runoff ceases. Storm events and base flows will be sampled throughout the project period for an estimated total number of 180 samples.

TASK 9 Benthic macroinvertebrate samples will be collected once during the project at each of the tributary monitoring sites. Three replicate samples will be collected at each monitoring site for a total of 24 samples. Samples will be collected using either a D-net or a Courtemanch sampler. All samples will be collected during a fall index period during the project.

LINE ITEMS	NON-FEDERAL		STATE	FEDERAL	TOTAL
	CASH	IN-KIND	NRFF		
Local Coordinator (@ $15/hr)				$10,000	$10,000
Travel				$3,500	$3,500
Biological Analysis			$7,200		$4,800
Water Quality Analysis	$4,000			$23,000	$27,000
Supplies and Shipping	$600			$550	$1,200
Equipment			$1,000	3,500	$7,000
Total	$4,600.00		$8,200.00	$40,550	$53,350

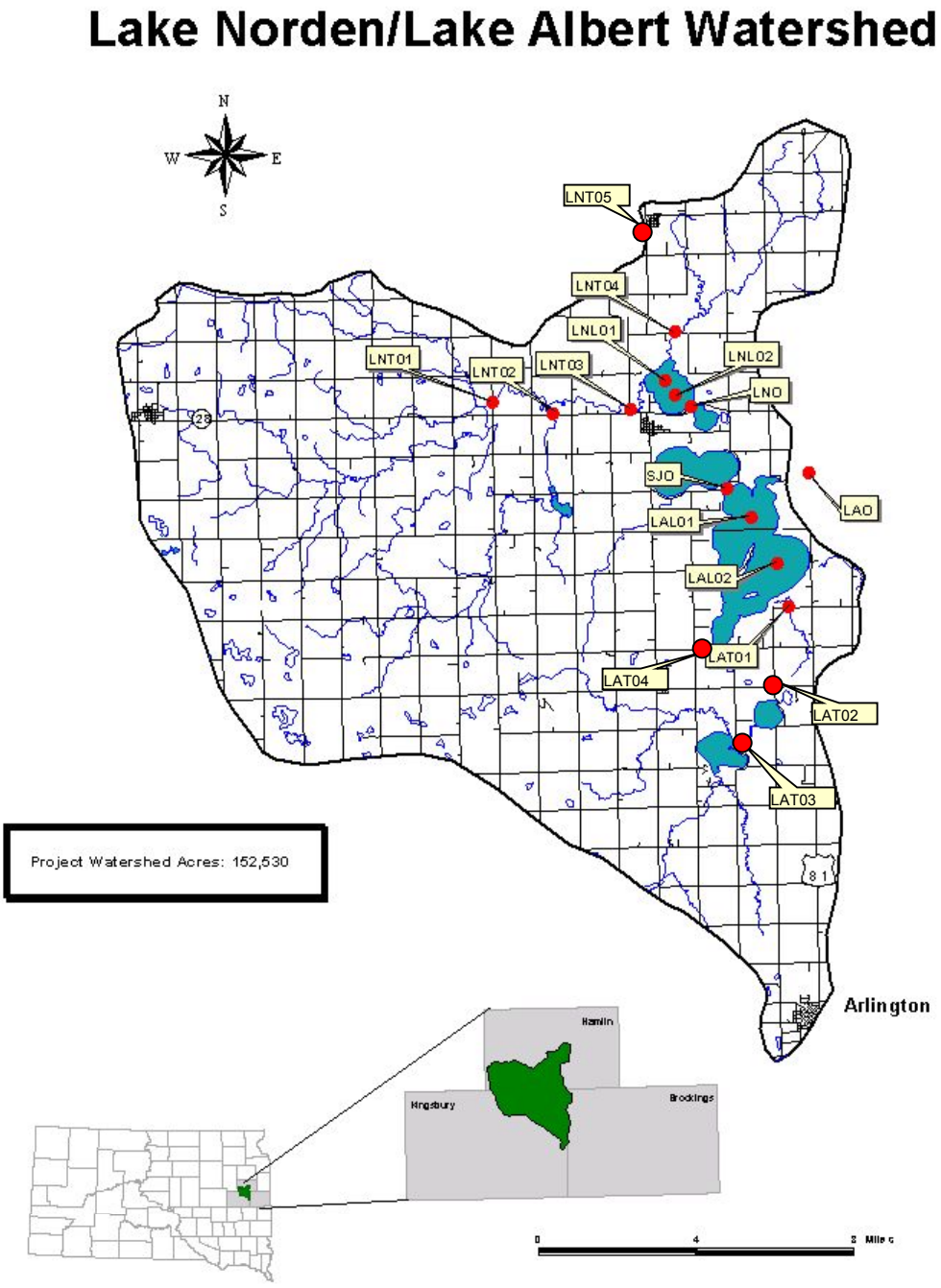

Lake Norden/Lake Albert Watershed
N
W
E
S
LNT05
LNT04
LNL01
LNT01
LNT02
LNT03
LNL02
LNO
SJO
LAO
LAL01
LAL02
LAT01
LAT04
LAT02
LAT03
Project Watershed Acres: 152,530
Arlington
Hamlin
Kingsbury
Brookings

Figure 3.

QUALITY ASSURANCE/QUALITY CONTROL:

Approved QA/QC procedures will be utilized on all sampling and field data collection on the Lake Norden and Lake Albert Watershed Assessment Project. Please refer to the South Dakota Non Point Source Program Quality Assurance Project Plan for the details of the procedures to be followed.

PRODUCTS:

A tributary water quality report (including 180 water quality samples and 36 benthic macroinverebrate samples) which will include a description of the relationship between and influence of chemical and physical data. Hydrologic and nutrient loads will be calculated for the entire watershed.

RESPONSIBLE AGENCIES:

Task Responsibility:

Project Coordinator
Project Sponsor

Design and Technical Assistance:

South Dakota Department of Environment and Natural Resources

WORK ACTIVITIES:

Water samples will be collected with a suspended sediment sampler when possible. All sample bottles will be iced and shipped to the lab and collected using the methods described in the Standard Operating Procedures for Field Samplers by the State of South Dakota Watershed Protection Program. Nutrient and solids parameters will be sampled at 12 tributary sites in the watersheds of Lake Norden and Lake Albert. The South Dakota State Health Laboratory in Pierre, SD will analyze all samples. The watershed water quality data will be integrated together with the hydrologic loading to provide a complete analysis of the lakes.

OBJECTIVE 3: Ensure that all water quality samples are accurate and defendable through the use of approved Quality Assurance/Quality Control procedures.

TASK 10 The collection of all field water quality data will be accomplished in accordance with the Standard Operating Procedures for Field Samplers, South Dakota Non Point Source Program.

TASK 11 A minimum of 10 percent of all the water quality samples collected will be QA/QC samples. QA/QC samples will consist of field blanks and field replicate samples. An estimated 44 samples will be collected during the project.

TASK 12 All QA/QC activities will be conducted in accordance with the Non Point Source Program Quality Assurance Project Plan.

TASK 13 The activities involved with QA/QC procedures and the results of QA/QC monitoring will be compiled and reported on in a section of the final project report and in all project reports.

LINE ITEMS	NON-FEDERAL		STATE	FEDERAL	TOTAL
	CASH	IN-KIND	NRFF	319	PROJECT
Local Coordinator (@ $15/hr)				$1,500	$1,500
Water Quality Analysis	$1,800			$4,800	$6,600
Supplies and Shipping				$200	$200
Total	$1,700.00			$6,500	$8,300.00

PRODUCTS:

A Quality Assurance/Quality Control monitoring report. A total of 44 samples will be collected.

RESPONSIBLE AGENCIES:

Task Responsibility:

Project Coordinator
Project Sponsor

Design and Technical Assistance:

South Dakota Department of Environment and Natural Resources

WORK ACTIVITIES:

Approved QA/QC will be utilized on all sampling and field data collected during the Lake Norden and Lake Albert project. Please refer to the South Dakota Non Point Source Program Quality Assurance Plan and the South Dakota Non Point Source Program Standard Operating Procedures for Field Samplers for details of the procedures to be followed.

OBJECTIVE 4: Evaluation of agricultural impacts to the water quality of the watershed through the use of the Agricultural Nonpoint Source (AGNPS) model.

TASK 14 The Lake Norden and Lake Albert watersheds will be modeled using the ANNAGNPS model. ANNAGNPS is a comprehensive land use model which estimates soil loss and delivery and evaluates the impacts of livestock feeding areas. The watershed will be divided into cells. Each cell will be analyzed after collecting several parameters for each cell with additional information collected for animal feeding operations.

TASK 15 This model will be used to identify critical areas of nonpoint source pollution to the surface waters in the watershed. Contributors of nutrients and sediments to surface water in the Lake Norden and Lake Albert watersheds will be identified.

LINE ITEMS	NON-FEDERAL		STATE	FEDERAL	TOTAL
	CASH	IN-KIND	NRFF	319	PROJECT
Local Coordinator (@ $15/hr)	$8,100		$6,900		$15,000
Travel			0	$1,000	$1,000
Supplies and Shipping			$55	$300	$355
Total	$8,100		$6,955	$1,300	$16,355

PRODUCTS:

Report on land use in the watershed.
Recommendations for remediation of pollution sources in the watershed.

RESPONSIBLE AGENCIES:

Task Responsibility:

Project Coordinator
Project Sponsor

Design and Technical Assistance:

South Dakota Department of Environment and Natural Resources

OBJECTIVE 5: Public participation and involvement will be provided for and encouraged.

TASK 16 Informational meetings will be held on a quarterly basis for the general public and to inform the involved parties of progress on the study. These meetings will provide an avenue for input from the residents in the area.

TASK 17 News releases will be prepared and released to local news media on a quarterly basis. These releases will be provided to local newspapers, radio stations and TV stations.

LINE ITEMS	NON-FEDERAL		STATE	FEDERAL	TOTAL
	CASH	IN-KIND	NRFF		
Local Coordinator (@ $15/hr)				$500	$500
Supplies and Shipping				$450	$450
Total				$950	$950

PRODUCTS:

Public input to the project.
Information and education about the project.
Involvement and/or input from the public will be documented.
A total of four news releases will be produced
A total of four meetings will be held.

RESPONSIBLE AGENCIES:

Task Responsibility:

Project Coordinator
Project Sponsor

Design and Technical Assistance:

South Dakota Department of Environment and Natural Resources

WORK ACTIVITIES:

Informational meetings will be held on a frequent basis for the general public to inform the involved parties of progress on the study and provide a means of public input.

OBJECTIVE 6: Development of watershed restoration recommendations.

TASK 18 Once the field data is collected, an extensive review of the historical and project data will be conducted.

TASK 19 Loading calculations based on project data will be done and a hydrologic, sediment and nutrient budget for each watershed will be developed.

TASK 20 The results of the AGNPS modeling of the watershed will be used in conjunction with the water quality and hydrologic budget to determine critical areas in the watersheds.

TASK 21 The feasible management practices will be compiled into a list of recommendations for the development of an implementation project and included in the final project report.

LINE ITEMS	NON-FEDERAL		STATE NRFF	FEDERAL	TOTAL
	CASH	IN-KIND			
Local Coordinator (@ $15/hr)				$2,000	$2,000
Supplies and Shipping			$55		$55
Total			$55	$2,000	$2,055

PRODUCTS:

A list of viable watershed restoration recommendations and appropriate BMP's for the Lake Norden and Lake Albert watersheds will be produced.

RESPONSIBLE AGENCIES:

Task Responsibility:

Project Coordinator
Project Sponsor

Design and Technical Assistance:

South Dakota Department of Environment and Natural Resources

WORK ACTIVITIES:

An extensive review and study of the historical and current data will be done to determine the best management practices and hydrologic restoration techniques needed to improve water quality and sediment transport in the Lake Norden and Lake Albert watersheds.

OBJECTIVE 7: Produce and publish a final report containing water quality results and restoration recommendations.

TASK 22 Produce loading calculations based on water quality sampling and hydrologic measurements.

TASK 23 Summarize the results of the AGNPS model for the watershed and report locations of critical areas.

TASK 24 Write a summary of historical water quality and land use information and compare with project data to determine any possible trends.

TASK 25 Based on data, evaluate the hydrology of the Lake Norden and Lake Albert watersheds and the chemical, biological, and physical condition of the streams.

TASK 26 Produce a summary report of all QA/QC activities conducted during the project and include in the final project report.

TASK 27 Write a description of feasible restoration recommendations and a TMDL for use in planning watershed nonpoint source implementation.

LINE ITEMS	NON-FEDERAL		FEDERAL	TOTAL
	CASH	IN-KIND		
Local Coordinator (@ $15/hr)	$1,000			$1,000
Supplies and Shipping			$100	$100
Total	$1,000		$100	$1,100

PRODUCTS:

A final Report and TMDL incorporating all previously described objectives

RESPONSIBLE AGENCIES:
South Dakota Department of Environment and Natural Resources
Project Coordinator
Project Sponsor

WORK ACTIVITIES:

Statistical evaluation of all water quality and field data produced during the course of the study. Review and compilation of historical data will be completed. Restoration recommendations will be developed. Graphic presentations of the information will be produced.

3.3 MILESTONE TABLE - see attached milestone.

3.4 No special permits are required to do this assessment project.

3.5 The Hamlin Conservation District is the appropriate lead project sponsor for this project. The Conservation District boundaries encompass all of the involved watershed area. The conservation district is important to this project because of its relationship with watershed landowners. The main problems with the Lake Norden and Lake Albert watersheds appear to be sediment and nutrient loadings.

4.0 COORDINATION PLAN

4.1 The following groups/agencies have agreed through an informal agreement to cooperate in the Lake Norden and Lake Albert Watershed Assessment Project.

Hamlin Conservation District - Local Project Sponsor

South Dakota Association of Conservation Districts – Local support and technical assistance

US Natural Resource Conservation Service – Support and technical assistance

US Environmental Protection Agency –Support and technical assistance

South Dakota Department of Environment and Natural Resources - Technical assistance

4.2 In September of 2000 a letter requesting assistance was received from the Hamlin Conservation District requesting assistance for the preparation of an assessment study grant for the Lake Norden and Lake Albert watersheds.

4.3 Letters of support have been supplied by local organizations to DENR supporting the Lake Norden and Lake Albert Watershed Assessment Project.

4.4 This project will coordinate with frequent informal conversations with state, federal, and local government agencies and through quarterly meetings with the conservation district. Input and involvement in this assessment has been requested from SD Game, Fish, and Parks, NRCS, local organizations, and local government agencies.

4.5 There currently are no other agencies conducting assessment project activities on the Lake Norden and Lake Albert Watersheds.

5.0 EVALUATION AND MONITORING PLAN

5.1 The monitoring strategy is explained in section 3. The project will produce bi-annual progress reports. The sampling and analysis procedures required to complete the tasks within section 3 can be located in the Standard Operating Procedures for Field Samplers for the South Dakota Nonpoint source Program (SOP). The specific locations of these sampling methods within the SOP as they pertain to each task are documented in Table 3 on the following page.

5.2 This assessment project consists of a combination of chemical, hydrologic, land use and biological analyses. Monitoring sites will be maintained and sampled on the Lake Norden and Lake Albert watersheds. Ambient samples will be collected along with spring runoff and storm events. Stream discharge will be routinely measured. The chemical, physical, and biological parameters to be sampled during this project can be located in Table 1 (page 6) and Table 2 (page 8). Loads will be calculated based on the samples and data collected with the approved methods identified in section 5.1. A TMDL report will be produced for Lake Norden and Lake Albert.

5.3 All water quality monitoring will be done in accordance with the approved South Dakota Non point source Program Quality Assurance/Quality Control Project Plan and the Standard Operating Procedures for Field Samplers for the South Dakota Non Point Source Program.

5.4 Results from all water quality monitoring efforts under the Lake Norden and Lake Albert Watershed Assessment Project will be reported in the final project report. Data will be managed by the South Dakota Department of Environment and Natural Resources and maintained in a computer database. All sample data will be entered in the US EPA STORET Program by DENR. This data will be used as the foundation of a Section 319 Watershed Implementation Project proposal.

6.0 BUDGET

See attached budget pages

7.0 PUBLIC INVOLVEMENT

See Objective 5.

TABLE 3. Location of Sampling and Analysis Procedures for each applicable task involved with the Lake Norden and Lake Albert Watershed Assessment Project.

TASK NUMBER	TASK DESCRIPTION	ACTIVITY	REFERENCE IN SDWRA-1999 SOP
Task 1	Inlake Surface and Bottom Sampling at 2 inlake sites for Nutrient and Solids Parameters (Table 1). An estimated 40 samples are to be collected.	Inlake Sampling	Section 7.0 pges 4-11 Section 7.0 pges 1-12
Task 2	Water Column dissolved oxygen and temperature profiles. Fecal coliform and chlorophyll *a* sampling will also be conducted. 180 samples	D.O. and Temp. Profiles. Fecal, and Chl-*a* sampling	Section 7.0 pg 5 Section 7.1 pg 10 Section 7.0 pg 12
Task 3	All Inlake Samples collected using the methods described in the SOP for field samplers by the State of South Dakota Water Resources Assistance Program	Inlake Sampling	Section 7.0 pges 4-11 Section 7.0 pges 1-12
Task 5	Discrete discharge measurements will be taken on a regular schedule and during storm surges.	Flow (Marsh-McBirney) or Flow (AquaCalc)	Section 7.1 pges 5-9
Task 7	Collect water quality samples from 12 tributary monitoring sites. Table 2 shows the parameters to be measured.	Tributary Sampling Procedures	Section 7.1 pges 1-18
Task 8	Sampling twice weekly during snowmelt and once a week thereafter until runoff ceases. Storm events and base flows will be sampled throughout the project period for an estimated total number of 120 samples.	Tributary Sampling Procedures	Section 7.1 pges 1-18
Task 9	The collection of all field water quality data will be accomplished in accordance with the Standard Operating Procedures for Field Samplers, South Dakota Non Point Source Program. 22 replicate and 22 blank samples	Quality Assurance	Section 10.0 pges 1-3
Task 10	A minimum of 10 percent of all the water quality samples collected will be QA/QC samples. QA/QC samples will consist of field blanks and field duplicate samples. An estimated 32 samples will be collected during the project.	Quality Assurance	Section 10.0 pges 1-3
Task 11	All QA/QC activities will be conducted in accordance with the Water Resources Assistance Program Quality Assurance Project Plan.	Quality Assurance	Section 10.0 pges 1-3
Task 12	The activities involved with QA/QC procedures and the results of QA/QC monitoring will be compiled and reported in a section of the final project report and in all project reports.	Quality Assurance	Section 10.0 pges 1-7
Task 13	Use of the AGNPS computer model	Watershed Modeling	Section 17.0 pg 1

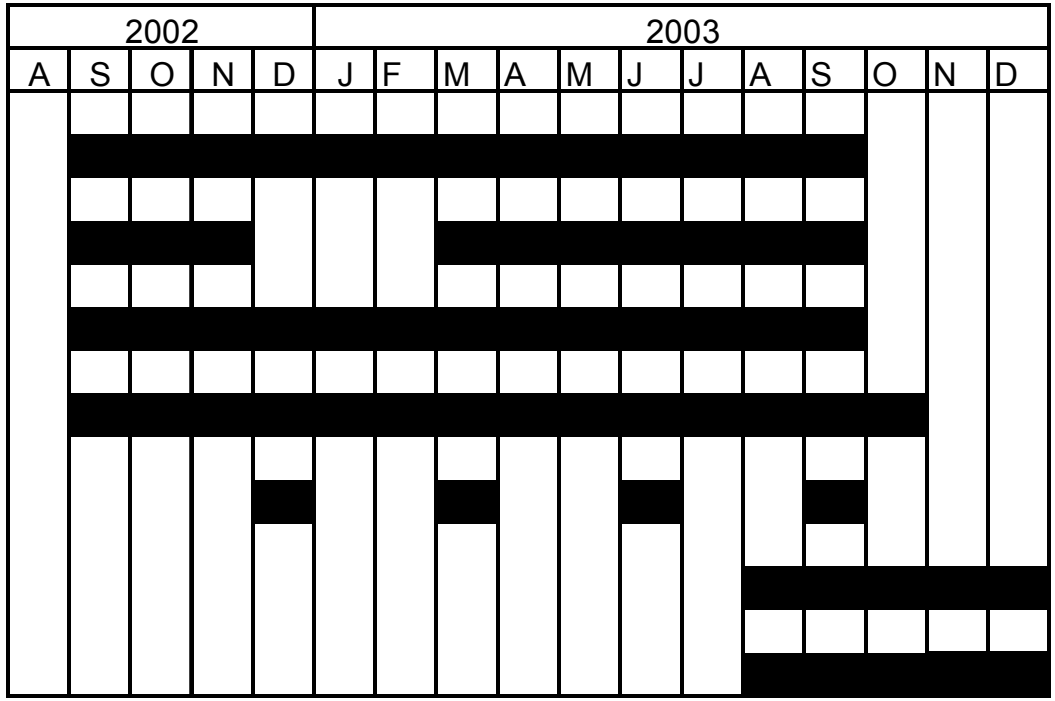
LAKE NORDEN AND LAKE ALBERT ASSESSMENT PROJECT BUDGET			
PART 1: FUNDING SOURCES	**2002**	**2003**	**TOTAL**
EPA SECTION 319 FUNDS	$5,895	$54,305	$60,200
OTHER FEDERAL FUNDS Does Not Apply			
LOCAL MATCH	$3,930	$36,380	$40,310
TOTAL BUDGET	$9,825	$90,685	$100,510

*INCLUDES MULTIPLE COMMUNITY ORGANIZATIONS AND AGENCIES

Lake Norden and Lake Albert Watershed
Assessment Project
Hamlin Conservation District
Proposed
Budget
2001-2002

		Total Budget	Federal	Non-Federal	Federal 319 Funds	State NRFF	Local
Personnel	@$15/hr	$31,300	$14,000	$17,300	$14,000	$6,900	$10,400
Office Rent	@$200/mo/person	$2,400		$2,400			$2,400
Local Admin.		$4,000		$4,000		$4,000	
Lab Analyses	270 samples@$150	$40,600	$34,800		$34,800		$5,800
Biological analysis 36 samples@200		$7,200		$7,200		$7,200	
Equipment		$5,500		$3,500	$3,500	$2,000	
Travel		$6,000	$6,000		$6,000		
Supplies and Shipping		$3,010	$1,900	$1,100	$1,900	$110	$1,000
Boat and Motor		$500		$500			$500
	TOTAL	**$100,510**	**$60,200**	**$40,310**	**$60,200**	**$20,210**	**$20,100**

Lake Norden and Lake Albert Watershed Assessment
Hamlin Conservation District
Milestone Chart
2002-2003



SOUTH DAKOTA NONPOINT SOURCE PROGRAM
QUALITY ASSURANCE PROJECT PLAN

SUBMITTED BY:

SOUTH DAKOTA DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF FINANCIAL AND TECHNICAL ASSISTANCE
WATER RESOURCES ASSISTANCE PROGRAM

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Project Title: Lake Norden and Lake Albert Assessment Project

APPROVED BY:

South Dakota Watershed Protection Program Environmental Senior Scientist, Assessment Section	Date
South Dakota Watershed Protection Program Project Officer	Date
South Dakota Watershed Protection Program Quality Assurance Coordinator	Date